E-LEARN 2011
International Journal on E-Learning Corporate, Government, Healthcare & Higher Education

E-learning & Higher Education: Strengths and Weaknesses from Students' Perspective

Neuza Pedro
Institute of Education
University of Lisbon- Portugal
nspedro@ie.ul.pt

Abstract: When it comes to organizing programs for ICT-integration and e-learning initiatives in higher education, the analysis of how these programs can converge with universities' strategic plans, colleges' direction boards' ambitions and departments projects tend to be highly valued. In the contrary, students' opinions, their favourable/unfavourable positions regarding the defined lines of actions, their concerns, needs and suggestions tend to be poorly considered. Trying to fill this gap, the study described in this paper reports the inputs collected from the analysis of students' point of view regarding the e-learning program developed for the University of Lisbon.
An empirical study based on semi-structured interviews developed with the students' unions form each faculty was conducted. It was possible to perceive the students' evaluation of the pertinence of the universities' e-learning program, considering 4-domains of analysis: (i) value and relevance of an e-learning program, (ii) identified potential of the e-learning program for the each faculty; (iii) positive and inhibit factors of the programs' implementation process, (iv) strengths and weaknesses for the students.

Keywords: e-learning, higher education, students' perceptions

Introduction

Technological evolution has brought remarkable changes in economy and society, with an irreversible impact on education. The Internet has enabled the emergence of a global world where knowledge and information move at a fleeting pace, and where flexibility and innovation are essential demands of the learning process. In this context, ICT-enhanced learning and online learning environments are presented as a major challenge for educational institutions. In higher education, institutions tend to feel the pressure for proactively embrace technologies in their administrative routines and teaching practices.

The implementation of projects that promote the development of updated teaching and innovative research practices, where virtual learning systems, multimedia resources and blended/fully online learning initiatives start to take place is a major investment of a significant number of universities and colleges.

Technological developments and the introduction of Web 2.0 enabled new ways to create, develop and deliver educational content in diverse and innovative formats. This increasing pace of change led to the progressive development of distance learning with a particular emphasis on e-learning. Some authors even consider that the traditional, face-to-face classroom, as we now perceive it, could disappear in a near future [1].

Not aside from all these technological development, huge socio-economics changes have been felt all over the globe. Local and national economies have been and/or promise to be shaken and few is known about its consequences in the educational systems. As a result, Higher Education Institutions (HEI) are finding themselves competing more than ever for students, research funding and recognition in a world-wide basis [2]. Through the development of new virtual learning environments and high-tech online communication systems, universities have been able to export themselves, extending their offer beyond national boundaries, conquering new markets.

University of Lisbon e-learning program

With ancient origins in the XIX century, the University of Lisbon (UL) was created in 1911 has a traditional face-to-face college and still persists as so until today. With a wide range of graduate and postgraduate courses, the UL has currently 22,245 students that are enrolled in one of the 304 courses available in all different scientific areas. The University is organized into five strategic areas of research and teaching which integrates the eleven faculties and institutes: Arts and Humanities (which integrates the Faculty of Fine Arts and Faculty of Letters), Health Sciences (which integrates the Faculty of Pharmacy, Faculty of Medicine and Faculty of Dental Medicine), Science and Technology (Faculty of Science), Legal and Economic Sciences (Faculty of Law) and Social Sciences (which integrates the Institute of Social Sciences, Faculty of Psychology, Institute of Education and Institute of Geography and Territorial Planning). These areas establish a new form of academy organization and reflect the willingness to adapt the University to the challenges of the future in the international higher education space.

Todays' fast-paced global world calls for life-long learning, continuous training, constant academic and professional updating, as well as the development of autonomous, responsible and flexible professional skills and learning practices. In this context, The University aims to invest in its human potential, recognizing the importance of knowledge building and sharing as a way to adapted higher education to a rapidly changing global society. The UL seeks to accompany these changes, promoting educational initiatives that incorporates and react to the demands of today reality. Within this logic of adaptability and trying to offer current, reliable and original solutions, the University of Lisbon embraced a new paradigm of education: e-learning.

The e-learning program of UL adopts a broad perspective of the e-learning concept. It incorporates the development of fully online courses and programs (mostly on post-graduate degrees), blended-learning initiatives and general use of ICT in the service of learning or learner support.

Aiming to (i) promote the use of learning management systems in the UL (http://e-learning.ul.pt), (ii) sensitize and empower the faculties in the use of virtual learning environments as well as in the optimization, management and development of online educational content, (iii) foster and give support to the development of curricular units, so as to increase UL´s offer of e-learning courses, and (iv) monitor and investigate the b-learning and e-learning practices in the University, bearing in mind the need to increase its knowledge, to improve its quality and to develop tailored innovative solutions, the program started in 2010.

A year was previously invested in the design of the university e-learning program, specifically to collect relevant information, consult the principal internal stakeholders and to explore possible partnerships with external agents and institutions. The following actions were taken in the preliminary year:

a) data analysis of the each faculty baseline regarding the use of learning management systems (LMS) and other e-learning solutions (total amount of courses open in the LMS, identification of intensity of use, selection of remarkable preliminary experience and resources, identification of 'visionary'/'early adopters' professors);

b) analysis of the level of maturity, stability and robustness of technological infra-structure and information systems, on an organizational perspective,

c) meetings with the direction boards of each faculty (for collecting relevant information for the development of objectives and activities of the e-Learning Program of UL, identification of converging interests and possible lines of articulation with faculty strategic plans, contact with existing initiatives in the e-learning domain; identification of each faculty specific needs, interests and intentions in the field, and the development of e/b-Learning courses; support the development of individualized plans to implement e-learning in the each faculty).

d) meetings with other relevant units and services within each faculty (with a scope of actions related to information systems, academic services, multimedia labs, quality assurance, organization innovation, etc.);

e) consultative meetings with other external agents and relevant institutions in the domain of learning management systems, ICT-integration, e-learning applications for higher education and distance education (Open-University, national services providers and other possible partners);

f) interviews with Students' Unions of each faculty and institute.

Coordinated by the Rectoral Team and the Institute of Education, this preparatory movements revealed to be highly relevant for the development of an ambitious, cost-effective, adapted and feasible project, which was therefore, assigned to be managed by the Institute of Education. These activities intended to guaranty the reunion of the main key-success factors, pointed out by research (Chalier, Platteaux, Bouvy, Esnault, Lebrun, Moura, Pirotte, Denis & Verday, 2004) as important for an efficient introduction process of e-learning in higher education institutions. It was also added an important the analysis of students opinions and concerns regarding e-learning implementation process.

Although, literature tend to highlight the need to consider the implications for everyone involved before implementing any new e-learning strategies (O'Neill, Singh & O'Donoghue, 2004), the analysis of the 'design/implementation of E-learning projects in higher education' state of art reveal that institutions tended to overlook the relevance of student representations as a feedback mechanism (Jara & Mellar, 2010).

Collecting feedback from students opinions and experiences is widely recognized as a central strategy for monitoring the quality and standards of teaching and learning in higher education institutions; for instances, in the UK, national quality standards reports set out that the establishment of student views has become a key aspect of quality assurance and enhancement processes in universities (Watson, 2003). Jara and Mellar (2010) stresses the importance of establishing student views as a central activity for enhancement, highlighting that to be effective the data collected needs to be integrated into a regular cycle of analysis, reporting, action and feedback.

When it comes to organizing programs for ICT-integration and e-learning initiatives in higher education, the need to think about how these programs can converge with universities' strategic plans, faculties' direction boards' ambitions and departments projects tend to be highly valued. In the contrary, students' opinions, their favorable and unfavorable positions regarding the defined lines of actions, their needs and suggestions tend to be poorly considered. However, it is necessary to include students in the institution decision-making processes, especially when main changes that directly affect this audience are intend to be achieved.

Trying to fill this gap, the study described in this paper reports the inputs collected from the analysis of students' point of view regarding the e-learning program developed for the UL. The authors intend to collect and explore students' perceptions about:

. the use of technology in their faculty (both general web-based institutional systems, Web 2.0 tools and specific software), projects previously undertaken by the institution in the ICT and e-learning field, perceived level of confidence of professors and teaching assistants in using ICT for teaching purposes;

. importance attributed to an ICT-integration project and e-learning program in the university, its potential and possible weaknesses for the each faculty and each different scientific area of knowledge;

. the factors that need to be considered (for enhancement and for removal procedures) in the implementation of an e-learning program and appropriate strategies to boost that process;

. perceived importance of digital skills in employability and labor market integration, experiences of using technologies in learning activities and other training opportunities offered by the institution in that domain.

The Study

An empirical research based on qualitative-analysis methods was conduct. Data was collected in 2010-2011 through eleven *semi-structured* interviews.

Gillham (2005) regarded interviews as an interchange of views between two or more people on a specific topic of interest that sees the centrality of human interaction for knowledge production, and where the social situatedness of research is taken in consideration, en order to explore, probe, and ask questions that will elucidate (Patton, 2000) the particular subject that we predetermined as central, an interview protocol was developed. It had an introductory part, in which the researcher presents the aims of the study, synthetize Rectoral Team intentions to develop an e-learning program for the university, and explore some common misconceptions about the concept of e-learning. In that process, the students were invited to ask every question they had and to feel free to require for any clarifications about all the covered topics.

The second part of the interview protocol, as common in semi-structured interviews, was mostly based on open-ended questions. The sequence of the questions was not necessarily the same for all respondents. Also, most of the questions were previously defined by the researcher but others also arise naturally during the interview. All the questions aim to cover the following topics.

(i) value and relevance of an e-learning program: to achieve students judgmental evaluation of the pertinence and utility of a unified program for ICT-integration and e-learning initiatives for the university;

(ii) identified potential of the e-learning program for the each faculty;

(iii) positive and inhibit factors of the programs' implementation process in each faculty;

(iv) strengths and weaknesses of the initiative for the students.

The sequential order of the topics is purposely established to make students assume an eco-systemic approach of analysis, to move through the topics analysis from a zoom-in/zoom-out perspective. Beginning with

institutional-oriented questions, students are lead from a university-focused to an individual-oriented perspective, also passing through a faculty-centred level of questions. The interview protocol structure promotes the students iterant movement between different levels of analysis, moving from a micro-perspective, focused on students' learning processes (specific degree, studying experiences, classes) to a meso-perspective focused on their specific faculty (scientific area of knowledge, administrative services, information processes, communication patterns with directive boards, professors, staff), to an exo-perspective, institutionally oriented (where the point of view is centred in the university has a specific system), and to a macro-perspective, in which the central topics are asked to be seen from a broad standpoint, considering the relationships of this university initiative with other systems as global economy, society, companies and labour market (Fig. 1).

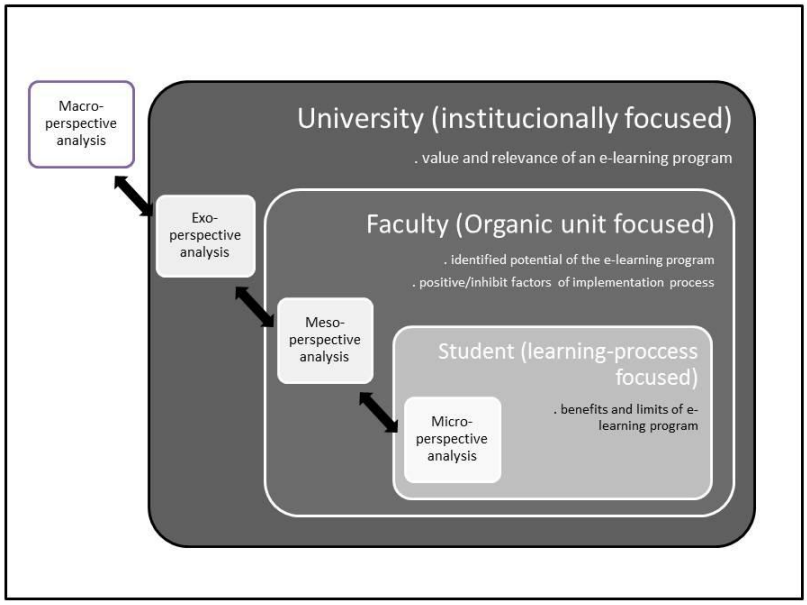

Figure 1: Representation of analytical perspective of the data analysis

Each faculty has their own students' unions so eleven students' unions were invited to take part of the research. After numerous contacts, all the students' unions answered positively to the invitation. Eleven interviews were conducted. The total of participants of the study is 16 undergraduate students (9 males and 7 females) with at least a 3-years' experience in the Campus, representing the eleven faculties of the University of Lisbon (Table 1).

Faculty	Abbreviation in text	Nº of participants
Faculty of Fine Arts	SU-FFA	2
Faculty of Science	SU-FS	2
Faculty of Law	SU-FL	2
Faculty of Pharmacy	SU-FPh	1
Faculty of Letters	SU-FLe	2
Faculty of Medicine	SU-FM	2
Faculty of Dental Medicine	SU-FDM	1
Faculty of Psychology	SU-FP	1
Institute of Social Sciences	SU-ISS	1
Institute of Education	SU-IE	1
Institute of Geography & Territorial Planning	SU-IGTP	1
Total	11	16

Table 1: Number of participants from each faculty

Student's unions are the representative body for all students of each faculty; their fields of activity include a wide variety of interests ranging from pedagogical and cultural concerns through sports to the supply of services to students. They are, consequently, an essential feature of academic life and have greatly contributed to the cultural enhancement of the University as well as to its relation with the environment to which it belongs. Therefore, they were seen as well-informed elements and reliable source whose opinions should be taking into consideration as we aim to access to students perceptions.

Interviews were recorded and the audio-files were analysed through thematic content-analysis methods considering the four domains of analysis.

Findings

The following results summarize the opinions and ideas presented by the participants, the representatives of the eleven students' unions. Students' speech is indirectly presented as evidence to support different assumptions. Students' main ideas are organized as topics in the four domains of analysis: (i) value and relevance of an e-learning program (for the university); (ii) identified potential of the e-learning program for the each faculty; (iii) positive and inhibit factors of the programs' implementation process in each faculty; (iv) strengths and weaknesses of the initiative for the students.

(i) Value and relevance of an e-learning program (for the university)

The e-learning program of University of Lisbon (UL) was seen as highly relevant and beneficial from ten of the eleven students unions interviewed. Two of the students' union (SU-FM) even highlight the fact the program is a very important movement, at a time when all the relevant international universities have already embrace virtual learning systems and online learning programs. Other four students' unions (SU-FP; SU-IE; SU-IGTP; SU-FS; SU-FFA) indicated that this is an important evidence of university' modernization and a significant sign of institutional concern about taking measures to promote the development of the new skills that society and future employers require. Only one students' union (SU-FL) evidenced a suspicious attitude regarding the implementation of a program for promoting online and distance learning in a traditional face-to-face teaching university.

Students highlights that one of the main strengths of an e-learning program for the University of Lisbon relies of the possibility of establishing a unifying and congregated movement in the field of e-learning (SU-FPh) for all faculties and institutes, and also, creating a shared vision of how the concept of e-learning is understood within the university (SU-FM; SU-FPh; SU-FLe).

The most mentioned value-added of an e-learning program for the UL is the possibility of amplifying the number of students of the university. The implementation of these new approaches for teaching and learning, especially by the development of blended or fully online courses, makes possible for the university to go beyond its traditional audience. It could promote the enrolment of Portuguese-spoken students, specifically from African countries and Brazil (SU-ISS; SU-IGTP; SU-FL; SU-FDM; SU-FLe), in graduate or post-graduate degrees. Other non-conventional public are also referred, this time with a national focus; full-time working students (SU-FDM; SU-FS), distant-residents, as well as people with disabilities or special educational needs (SU-FP; SU-IE).

The ICT-use dissemination process and e-learning initiatives was also seen as a way to promote closer relationships with other higher education institutions, both in national (SU-FDM) and international context (SU-ISS), and to stimulate the development of more inter-institutional post-graduate programs (SU-IGTP; SU-FFA).

As a final point, it was also register the idea that an e-learning program is an evidence that relevance has been given to the innovation and quality in the teaching domain (SU-FP; SU-IE), which through the years has been deprecated in favor of the research domain. It was establish that it could mean that a concerns regarding faculties qualification, professors' training and professional development in higher education is emerging (SU-FP; SU-IE).

(ii) Identified potential of the e-learning program for each faculty

As already had been pointed as referring to university, students' unions also see a high potential in the UL e-learning program for their specific faculty (SU-FP; SU-IE; SU-IGTP; SU-FS; SU-IGTP, SU-FDM; SU-ISS; SU-FFA),

not only as a way to potentially attract non-conventional public (SU-FP; SU-IE, SU-ISS; SU-FLe), but also as a way to stimulate the development of multi-disciplinary projects (SU-FDM) and new inter-institutional courses (SU-IGTP), mainly in emergent scientific domains. This logic of conquering additional students and diversify course offers is presented, in clear connection, with the fact that faculties need to pursue alternative forms of funding (SU-ISS; SU-IGTP; SU-FLe), not only for solving financial restrictions, but also because funding can be used to improve institutions quality and recognition. Actually the concern with more effective dissemination of faculties' prestige, in the research and/or in teaching domains, is an aspect stressed out by five of the students' unions (SU-FM, SU-FL; SU-ISS; SU-IGTP; SU-FFA).

Again, only one students' union didn't see a real benefit of the e-learning program for its institution. They justify their opinion with the fact that these new approaches don't fit the reality of its faculty, specifically their working principles and teaching practices (SU-FL), where oratory, and therefore face-to-face lectures, exhibits a very important role.

Other relevant ideas were presented regarding the potential of an e-learning program. Primarily focusing in the computer-mediated-communication dimension of ICT-integration, the e-learning program was also pointed as a good chance for:

. creating more efficiency in the communication process between the students and faculty services, students and professors (SU-FP; SU-IE; SU-IGTP; SU-FM) and even between students (SU-IGTP);

. contributing to increase the regularity of communication between teaching assistants and students, mostly to support studying activities (SU-FS), as well as the communication between teachers assistants and professors (SU-FL; SU-FM; SU-FLe);

. contributing to support the supervision relationships between professors and students, specifically for upholding regularity in the communication patters, generally between graduate seminar group sessions. That could improve the thesis orientation processes (SU-FP; SU-IE, SU-ISS) and the internships supervision (SU-FPh; SU-FM; SU-FDM; SU-FLe), which tend to be establish in the last year of graduate programs but more frequently in Masters and Doctoral degree programs.

The possibility of implementing other web-based tools for supporting learning and teaching was also referred by three students' unions as a 'good-excuse' to improve teaching quality, not only because inherent opportunities were found for updating graduate programs and course syllabus (SU-FS; SU-FFA),and rethink teaching methodologies (SU-FP; SU-IE) and content (SU-FFA), but also as a non-expensive way to 'bring to the UL campus' highly-recognized professors from other national and foreign universities, through the use of web-conferencing or webinars systems (SU-FP; SU-IE; SU-FL; SU-ISS; SU-FLe). Aligned with the previous mentioned idea of promoting faculty prestige, some student unions also saw web-conference systems as a valid way to promote online lectures of prestigious professors and researchers (SU-FL; SU-ISS; SU-IGTP; SU-FLe) of their faculty.

(iii) Positive and inhibit factors of the programs' implementation process

Primarily focusing on the factors identified by the students' unions has been able to exert a positive effect on the e-learning programs' implementation process, it is important to point out that the more frequently refereed factors were related with students high technology-fluency and interest in multimedia content (SU-FP; SU-IE; SU-FM; SU-FPh; SU-IGTP). Todays' students use new technologies on a daily basis; they have quite experience with online tools, applications, simulators and networks, and they are very motivated to use it for learning purposes. In fact, it was possible to conclude that, in some faculties, even though professors do not use learning management systems or other applications for delivering course materials and to manage communication with the students, the students themselves have found ways to overcome that difficulty simply by using collaborative web 2.0 free tools as blogs, wikis or Google groups (SU-FP; SU-FM; SU-FPh; SU-IGTP; SU-FFA; SU-FLe).

Others positives factors was in fact related to structural or socio-economic issues. The first was associated with the urgent need to search for alternative and innovative sources of funding higher education (SU-ISS; SU-IGTP). The budget cuts imposed by the government to the higher education institutions is seen as a motive to undertake new measures and embrace innovative projects that can help overcome these financial restrictions. The second was associated with the fact that the implementation of learning management systems (LMS) in higher education can promote connections between the previous experience that freshmen-students bring from their secondary schools (SU-FS; SU-FDM). In the last three years, Portuguese elementary and secondary schools has taken a remarkable improvement in technological infra-structures and equipment, as well as, very 'heavy projects' related to ICT-integration ('LMS for every school' national initiative, dissemination of digital education content development projects, '1:1 laptops' initiatives, teachers ICT competence training and certification programs),

Moving to the inhibit factors, pointed out by the students unions it is important to notice that they appear to be mostly related to teacher attitudes and professional competences. The following aspects gathered greater consensus: professors lack of basic ICT skills, which was mentioned by nine of the nine students' unions (SU-FP; SU-IE; SU-FS; SU-FL; SU-ISS; SU-IGTP, SU-FDM; SU-FFA; SU-FLe); professor seniority (SU-FS; SU-FDM; SU-FPh); professors' constant lack of time (SU-FP; SU-IE; SU-FM; SU-FDM; SU-FLe); professors' absence of interest in technology (SU-FP; SU-ICS, SU-FPh; SU-FDM); very conservative mentalities and traditionalist perspectives assumed by faculties and university (SU-FM; SU-FPh, SU-FDM, SU-ISS), along with conservative attitudes in faculties and students (SU-FL; SU-FM); and classroom teaching methodologies (SU-FL; SU-FFA), which is most often theoretical knowledge transmission-based long lectures.

Other obstacles were referred, although with last evidence of consensus. They refer to technological issues and lack of efficient infrastructures and resources:

. lack of technical support for both students and teachers in campus (SU-FFA);

. the need for the faculty to settled a single virtual learning management system and strongly and consistency force its use by all elements (SU-FM). Students justify their opinion with the fact that in their faculty no single system has been settled. Students are forced to register and sign-in in 'let's say 5 or 6 different systems, whatever the professors wasn't to use', all with different layout organization and password requirements;

. the last years constant changes in online information systems and platforms for academic procedures, which requires time and effort from both students and professor to get comfortable in using it, time and effort that rarely present to be useful because a new one keeps coming (SU-FPh).

(iv) Strengths and weaknesses of the initiative for the students

Students' unions highlighted several potential benefits of the design and implementation of an e-learning program considering the learning process and their studying activities, most of which appear to be related to the improvement of the quality of the teaching-learning process.

Lined up with previously mentioned ideas, students' unions identified the following benefits:

. centralized access to all the information in a single online environment, in which every student can have access to ones' own-area where all campus services and useful institutional information is manageable (SU-FM; SU-FS);

. higher regularity and closeness in the communication between faculties and student (SU-FP; SU-IE; SU-FM; SU-FLe), due to the possibility of establishing complementary ways of online synchronous and asynchronous interaction with teachers, which reveals major benefits in situations where the professors or teaching assistant has to leave campus for a significant period of time (SU-ISS; SU-IGTP; SU-FLe), and in the supervision relationship developed in the graduate and postgraduate final years (SU-FM; SU-ISS; SU-FP; SU-IGTP);

. the possibility of establishing in real-time online contact with other students that are doing research outside de campus, for example, in anthropological studies (SU-ISS);

. more flexibility in schedules (SU-FPh, SU-ISS, SU-IGTP; SU-FS, SU-FDM) and, more interesting, the possibility of defining innovative ways of managing weekly-classes schedules, where theoretical lectures could be congregated on specific days of the week or in specific weeks, therefore releasing time for students to go on course-organized field trips and/or to get more deeply involvement in lab-based research projects (SU-FDM);

. innovative ways of consider 'students attendance', mostly, for full-time work-students and students in temporary incapacity-situation (SU-FP; SU-IE). In order to improve, non-traditional students studying conditions new forms of involvement in classes could be established. For instants, by the use of virtual classroom systems that enable synchronous and active participation in classes though a 'teacher-moderated' online environment or by being able to asynchronously watch videos of recorded classes (SU-FDM; SU-FS);

. possibility of developing new resources of support teaching and learning (SU-FL), as field-trip and study tours recording videos (SU-FS; SU-ISS; SU-IGTP), laboratory experiments tutorials or simulators (SU-FM; SU-FS, SU-FPh) or 3D prototype of real artistic pieces (SU-FFA);

. stimulate the development and the students' access to more interactive educational resource (SU-FS) as well as support studying materials from present and previous years (SU-FM);

. promote the development of autonomous work (SU-FL) and self-regulation skills in students work.

Although students' unions representatives pointed out a small amount of limits regarding the impact of a university e-learning program in the learning process, the mentioned ideas evidences clear risk-related conceptions about what cannot be jeopardize in the process. Two related concerns gathered the consensus of five students' unions:

. the danger of a centrally measure, as the e-learning program of UL appear to be, to be development and implemented on a blind approach in which the differences of each eleven faculty and the several fields of knowledge is not respected (SU-FPh; SU-FM; SU-FDM);

. the fact that the implementation process, even though with no intension, contribute to separate, move away students from the university and the university from students (SU-FS; SU-IGTP).

Another limit stressed out was the fact that students do not what to see their overall 'classroom-based teaching' to be replaced by online teaching (SU-FM; FPh) as their courses are shutting down and replaced by fully-online versions; neither want to see denied their possibility to having access to the 'old-good very inspiring theoretical lectures' (SU-FM; SU-FL).

Regarding the type of practices that e-/b-learning courses and programs could reveal, students' unions alert to the fact that online teaching could take the risk of excessive centralization in knowledge transmission or content-transference and the loss of the interpersonal and interactive dimension which the face-to-face classroom still maintain needs to be fight back (SU-FDM; SU-FS). Finally, one of the students indicated another potential risk of the e-learning program, the possibility of it being majorly focused on the graduate degrees (SU-IGTP). He called for attention to the (well-known) fact that the first years of a higher education degree does involve must more than information acquisition, books, papers and exams. It provides irreplaceable experiences, mainly interpersonally-mediated by the interaction with peers, professors and significant others, as the same time as, supports the mastery of 'scientific areas of knowledge'-related competences and professional skills that relies on the hidden-curriculum of colleges because it is related to the non-explicit and very difficult to materialize it lies inside behaviors, attitudes, values and beliefs… and this e-learning courses are still far from achieving.

Conclusions

The results evidenced that, generally, the students see the development and establishment of an e-learning program for the University of Lisbon as a highly relevant approach to be taken by the university but, above all, by each faculty (at least, the most part of them). An e-learning program is seen as a strategic measure that can attract an increasing number of students to the university, mostly non-traditional students, as foreign students, full and part-time working students, mature students (who start a degree with more than 23-years old) and other non-conventional social groups.

This will increase the need of faculties to adapt to an extremely diversified body of new students (O'Neill, Singh & O'Donoghue, 2004) produced by new economic rules that promotes an accelerated growth of unemployment rates, a changing culture of employment, where the guarantee of a profession for life is no longer valid, and to the advent of the 'knowledge-driven society' which makes lifelong learning and professional development an absolute requirement to every citizen. Prospective studies of the 90's alerted to the fact that an exponential demand for higher education throughout the world will take place; by 2025 it will be expected that 150 million people would be seeking post-secondary education (Goddard, 1998).

Students' opinions also emphasized the idea that a clear vision of the programs' purpose and specific aims of each faculty need to be defined within the national context but also with an international projection, where University of Lisbon prestige needs to be disseminate but also seek and owned. Another highlighted strategic measure, mutually presented when referring to (i) e-learning program value to the university and (ii) potential for each faculty, was the development of new graduate and postgraduate degrees as well as multi-disciplinary research projects, mainly in the most recent topics emerging in different scientific areas.

The relational and communicational facet of the teaching-learning process in higher education (interaction between institution and students, professors and students, between students) was also frequently referred as an important aspect to be considered, both in the (ii) identified potentials of the e-learning program for each faculty, (iii) as a positive factor of programs' implementation, and well as (iv) a potential benefit for students learning processes. It was interesting to see that the most commonly mention strengths of virtual learning environments or learning management systems, which is most often related to the possibility of anytime-anywhere access to resources and contend-delivery, didn't received as much attention from the students' unions, instead the relational dimension of the learning process was the most prevalent one.

Furthermore, the possible improvements that an e-learning program could contribute to introduce in the teaching and learning processes was also referred quite often by the students, as for supporting the (i) value and

relevance of a program for the university, as (ii) one of the programs potential for faculties and mostly, as well as (iii) an inherent benefit of the initiative regarding students activities. The most refereed ideas were related to: enhancing professors-students communication (more regular, more simply developed and more synchronously based); increasing the access to diversified learning activities, research projects, field trips, in-real-time briefings with 'outside of campus' experiences, web-conferencing with highly-recognized professors researchers; new approach for classes-schedules and attendance definitions (which is traditionally not very-well seen by professors); more interactive resources and multimedia studying-support materials. Students need to have access to more powerful learning tools as videos, tutorials, simulations or 3D models of scientific systems, data analysis software, modelling or organization tools and applications, online learning environments and virtual reality words for students to explore, manipulate, and experiment. The range and scale of possible applications of new technologies in higher education is presently almost beyond imagining because, while we try to cope with what is possible now, another technological application is becoming available and that immediately extend those possibilities even further (Laurillard, 2005).Therefore, higher education's institutions need to strategically incorporate and take advantage of these tools and systems in their teaching and research activities.

Considering the (iii) positive and inhibit factors of the programs' implementation process, the data collected shown that students identify as positive factors, aspects mostly related to students digital competences; their solid ability to manage web-widgets and high-tech gadgets, as well as their positive motivation to use it in benefit of learning purposes. There are a number of competing terms that claim to describe this generation of young people who are now entering universities across the world. The most common terms are 'Net generation' (Tapscott, 1998),'Digital Natives' (Prensky, 2001), 'Millenials' (Oblinger & Oblinger, 2005), 'Generation Y'. Nationally, they could be called 'Magellan-Generation' (Pedro, Wunsch, Pedro & Matos, 2010). Even though the scarce scientific substrate of these concepts, they bring out the idea that every year freshman-students does bring with them new habits, new tools and new expectations regarding higher educations. These differences need to be taken in consideration and not neglected or depreciated. Margaryan and Littlejohn (2008) found that students used a limited range of established technologies for learning purposes, which doesn't mean that in their pockets powerful tools, as IPad's and mobile phones, do not exist.

In opposition, when referring to inhibit factors, students emphasizes barriers related to professors attitudes and reduced level of confidence in ICT use in teaching activities. Infrastructure and information systems issues were also referred but in a much lower frequency. Students assumptions could support the idea that faculties, professors and systems needs to embrace the innovation and developmental process of (re)qualification in order to respond to todays and tomorrows students' needs. For innovative higher education institutions, which seriously wishes to improve the quality of education, it is imperative to design and develop a strategic plan that clearly define the organizational capacity of adoption/adaptation to technological innovations, as well as to social, cultural economics and political changes.

Finally, it is also important to consider students concerns, expressed as potential weaknesses of an e-learning program to the institution. Students evidences to be worried about the fact that online learning could contribute to decrease the importance attributed to the interpersonal dimension of the learning in the higher education level, which was seen as highly relevant, as well as to introduce ruptures in, the so important, relation between students and the university, meaning between the students and their university. Students do evidence the need to feel as an integrated part of the university and no innovative processes should question this sense of belonging. In a classical campus-based institution, that in presently celebrating its 100th anniversary, a pioneering and innovative project, as the e-learning program of the University of Lisbon, needs to be developed with profound respect to established practices and institutional conceptions, which must be used as supports to construct new visions for the todays' future.

References

Chalier, B., Platteaux, H., Bouvy, T., Esnault, L., Lebrun, M., Moura, A., Pirotte, C., Denis, B., & Verday, N. (2004). *Stories about innovate processes in higher education: some success factors.* Proceedings of the Networked Learning Conference, Lancaster April 5th-7th.

Gillham, B. (2005). *Research interviewing: The range of techniques*. Maidenhead: Open University Press.
Goddard, A. (1998, November). Facing up to market forces. *Times Higher Education Supplement,* 13 November, 6-7.

Jara, M., &, Mellar, H. (2010). Quality enhancement for e-learning courses: The role of student feedback *Computers & Education*, 54, 709–714.

Laurillard, D. (2005). E-Learning in higher education. In Paul Ashwin (Ed.), *Changing higher education: The development of learning and teaching*. London: RoutledgeFalmer.

Margaryan, A., & Littlejohn, A. (2008). Are digital natives a myth or reality?: Students' use of technologies for learning. Retrieved at August 22, 2011 from http://www.academy.gcal.ac.uk/anoush/documents/DigitalNativesMythOrReality-MargaryanAndLittlejohn.pdf

Oblinger, D. & Oblinger, J. (2005). Is it age or IT: First steps towards understanding the net generation. In D. Oblinger & J. Oblinger (Eds.), Educating the Net Generation (pp. 2.1-2.20). Boulder, Canadá: EDUCAUSE.

O'Neill, K., Singh, G. & O'Donoghue, J. (2004). Implementing e-learning programmes for Higher Education: A review of the literature. *Journal of Information Technology Education*, 3, 313-323.

Patton, M. Q. (2000). *Qualitative research and evaluation method*. London: SAGE Publications.

Pedro, N., Wunsch, L., Pedro, A., & Matos, J. F. (2010). Technologies, innovation and teachers' professional development: ask the students what todays' teachers need to learn. Proceedings of the International Conference on Education, Technology and Innovation, Madrid, 15-17 November 2010.

Prensky, M. (2001). *Digital Natives, Digital Immigrants.* Retrived at January 16, 2011 form http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf

Shachar, M., & Neumann, Y. (2010). Twenty years of research on the academic performance differences between traditional and distance learning: Summative Meta-Analysis and Trend Examination. *MERLOT Journal of Online Learning and Teaching, 2*, 6, 318-334.

Tapscott, D. (1998). *Growing up digital - The rise of the net generation.* NewYork: McGraw-Hill.

Watson, S. (2003). Closing the feedback loop: Ensuring effective action from student feedback. *Tertiary Education and Management*, 9, 145–157.